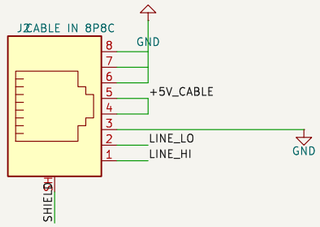
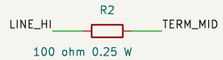
DSE-RX (RECEIVER) — schematic, v11 CANDIDATE (physical qualification unsigned)

01 / CABLE JACK J2, AC TERMINATION (R2, C5, JP1) AND SHIELD NETWORK









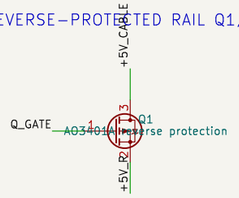








02 / REVERSE-PROTECTED RAIL Q1, RESERVOIR, CABLE TVS AND LED







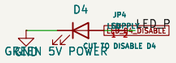




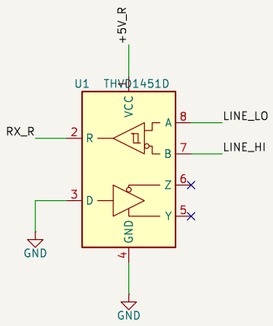


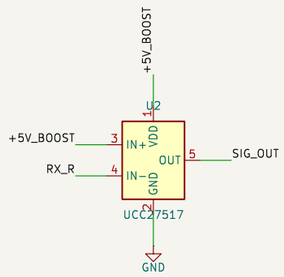


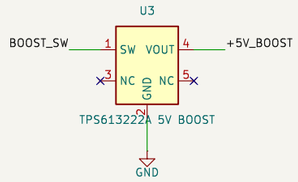


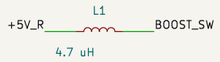


03 / ONE INVERTING DRIVER AND LOCAL BOOST; NO PARALLELED OUTPUTS









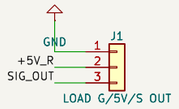




04 / LOAD PORT J1, OUTPUT PULL-DOWN, CLAMP, LED AND TEST PADS



















DSE v11 engineering successor. Native CAD evidence is separate from physical, host, cable and load qualification.

Cable: pins1/2 LINE_HI/LINE_LO; 3/6/7/8 GND; 4/5 +5V_CABLE. NOT ETHERNET / NOT PoE. No hotplug qualification.

RX: UCC27517 IN+ tied boost rail, IN− from fail-safe receiver R. Healthy idle R=HIGH gives SIG_OUT LOW; UVLO holds output LOW.

RX J1 pin2 remains +5V_R cable-derived OUTPUT. Boost powers signal driver only. Signal may exceed pin2: external load clamp/backfeed qualification REQUIRED.

NO CBL5V-OFF/local-feed variant: external RX supply is not authorized. Default cable feed only.

100 ohm / 10nF termination retained pending waveform decision: RC1us fails4x285ns and ideal68mA exceeds60mA recommendation.

25m/500kHz, 100mA output and old206.6ns latency are UNSIGNED targets; no empirical performance claim.

Single driver plus local boost on RX; native design review only

Smoothieware / CERN-OHL-S-2.0

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Title: DSE-RX v11 candidate

Size: A3	Date: 2026-10-01	**Rev: v11**
KiCad E.D.A. 9.0.8		Id: 1/1